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ABSTRACT

This document provides an overview of Alaska's Legislative Teleconference Network (LTN), which was created to broaden two-way contact between constituents and state legislators through the use of telephone, teleconferencing, and data communications. An executive summary precedes the main report, which focuses on the two entities of the Legislative Affairs Agency (LAA) that administer telecommunication facilities--the Division of Public Services (DPS), which provides information on legislative activity via Legislative Information Offices (LIO's), Legislative Teleconference Centers (LTC's), and Volunteer Teleconference Sites (VTS's); and the Legislative Data Processing center, which is responsible for statewide legislative data communications. Topics addressed include: (1) history and goals of the LTN and DPS; (2) types of facilities and functions maintained by the DPS; (3) equipment leased and owned by the DPS; (4) non-legislative use of the LTN; (5) services of the Data Processing Center within the LAA; (6) equipment leased and owned by the LAA computer network; (7) future plans to improve telecommunication services; and (8) three recommendations resulting from this study. A 16-item bibliography and list of persons interviewed for the report are included. (JB)

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LEGISLATIVE TELECOMMUNICATION SERVICES

rural research agency

august, 1984

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LEGISLATIVE TELECOMMUNICATION SERVICES

Services, Facilities,

And

Options

One In A Series Of Papers
On Alaskan Telecommunications

By

The Rural Research Agency
Jennifer Klein
August, 1984

Alaska State Senate
Community and Regional Affairs Committee

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EXECUTIVE SUMMARY

I. INTRODUCTION

Since the late seventies, telecommunications have played a major role in the legislative process. The Division of Public Services and the Legislative Data Processing center administer the telecommunication facilities of the Legislative Affairs Agency.

The combined services of telephone, teleconferencing, and data communications alleviate much of the hindrance caused by the extreme environment and travel costs so that public participation and interaction with the legislative process is possible.

II. THE DIVISION OF PUBLIC SERVICES AND THE LEGISLATIVE TELECONFERENCE NETWORK

A. The Network

The Legislative Teleconference Network (LTN) was created to broaden two-way contact between constituents and legislators. The Division of Public Services was formed in 1979 to oversee the dissemination of non-partisan information and encourage involvement with the Legislature through existing information offices and teleconference centers. The three types of facilities maintained by the division include: Legislative Information Offices (LIO's); Legislative Teleconference Centers (LTC's); and Volunteer Teleconference Sites (VTS').

B. Equipment Leased by the Division of Public Services

The LTN is supported by a leased four wire dedicated audio circuit which travels to twenty of the sixty-seven communities serviced in Alaska. To aid and enhance the usability of the dedicated circuit, The LTN also leases a Dantel selective switching system from Alascom. The switching system does the following: allows moderators to call conference sites when their conference sets may be turned off; excludes sites not needed in a particular teleconference; and most importantly, moves from the 4 wire dedicated circuit into the two wire regular telephone lines. This capability, referred as "offnet", expands the network to any site where regular telephone service is available. The offnet capabilities allow the formation of LTC's and VTS' where lower levels of participation cannot support the costs of a full time dedicated circuit.

C. Equipment Owned by the Division of Public Services

Bridging facilities must be used if a number of dial-up sites are scheduled in a teleconference. A central number is dialed by all conferees and they are connected into the teleconference. Commercial as well as the Learn/Alaska bridging facilities are used by the LTN. However, by January, 1985, the LTN will be using their own bridging facilities. Funding was granted in 1984 for two bridges with ten ports each.

Western Electric conference sets are owned by the LTN and available at all sites. Unfortunately, these sets, which are considered very good will not be manufactured within the next couple years. User interface, quick voice switching, and compatibility with existing systems should be considered when replacing these sets.

Another piece of equipment found at all sites is the facsimile receiver or telecopier. The Division of Public Services uses three models of Zerox telecopiers throughout the network. Because of varying degrees of sophistication of the machines and lack of money to replace older machines, most offices need more then one telecopier to ensure communication between the models.

D. Non-Legislative Use of the LTN

Although the mission of the LTN is to service the Legislature and its constituents, it allows other agencies to use the network on a time available basis. Legislative use of the network is very heavy during the session and is increasing every year. Combining the LTN and the Learn/Alaska audio teleconference network to form one network that would meet the needs for all state branches is not recommended. The specific mission of the LTN, to of provide communication between legislators and constituents, should not be compromised.

III. TELECOMMUNICATIONS WITHIN THE LAA DATA PROCESSING CENTER

A. LAA Data Processing Center

Most of the report has centered on the LTN. However, many services of the Data Processing Center play an important role in the agency's telecommunication program. The electronic mail system (EMAIL) is discussed in depth in the report Electronic Mail Systems. Through the Systems Network Architecture (SNA), the Legislative data network is interactive with the rest of the state's data communication facilities. This feature enhances the data abilities of the LAA by opening two-way communication between other state agencies and allowing further access to LAA services.

B. Equipment Leased by the LAA Computer Network

All of the major communication lines and the DATAPHONE II modems for the long distance lines are leased from Alascom.

C. Equipment Owned by the LAA Computer Network

Modems for dial-up sites and local lines between offices in the Anchorage, Fairbanks, and Juneau are owned by the department. LAA also owns most of the terminial hardware and software needed to run the network.

IV. PLANNING FOR THE FUTURE

There are a number of projects being planned or actually underway to improve telecommunication services within LAA:

The LTN has in response to legislative renewed interest in video teleconferencing is currently looking into slow scan or freeze frame video as a less expensive, short term answer to full motion video teleconferencing. As technology continues to lower the cost of many functions, full motion video may become more feasible in the future;

The Data Processing center is examining Alascom's ALASKANET, a package that would allow easier access to data base information systems and help some of the transmission problems in the remote dial-up sites;

Both the LTN and the Data Processing center are supporting a multiplexing system that would combine voice, data, facsimile, and teleconferencing (voice and video) on one shared transmission medium.

V. RECOMMENDATIONS

* Replacement conference sets for the Western Electric sets currently being used should be examined carefully.

* Since leasing equipment has allowed the LTN to remain flexible as new capabilities and improvements are added to a product, perhaps the LTN should examine leasing facsimile receivers to alleviate the budget restraints that keep the network from replacing the old machines.

* Combining the LTN with the Learn/Alaska network to provide all the teleconferencing services required by the executive branch is not recommended. The LTN should remain separate so that the specific purpose of providing communication between legislators and contituents will not be compromised. The Learn/Alaska network is in a better position to provide these necessary services to the executive branch.

I. INTRODUCTION

This paper is one in a series of telecommunication reports produced by the Rural Research Agency. This particular report will focus on the telecommunication services of the Legislative Affairs Agency. Since the late seventies telecommunications have played a major role in the legislative process by providing the means for expanded interaction between the legislature and constituents as well as support for the administrative duties of a large information network. There are two entities within the Legislative Affairs Agency which administer telecommunication facilities. The Division of Public Services provides information on legislative activity via Legislative Information Offices (LIO's), Legislative Teleconference Centers, (LTC's), and Volunteer Teleconference Sites (VTS') throughout the state. These sites are electronically linked by voice through the Legislative Teleconference Network (LTN). The Legislative Data Processing center is responsible for statewide legislative data communications that include electronic mail and a connection to the statewide network. These services are available to legislators, staff, and the public through computer nodes located throughout the state.

The Alaska State Legislature is the only legislative body in the nation that relys on telecommunications to link its constituents and legislators together.[1] The combined services of telephone, teleconferencing, and data communications alleviate much of the hindrance caused by the extreme environment and travel costs so that public participation and interaction with the legislative process is possible. The services offered by the Legislative Affairs Agency to accomplish this task will be examined in this report.

II. THE DIVISION OF PUBLIC SERVICES AND THE LEGISLATIVE TELECONFERENCE NETWORK

A. The Network

In 1977, Legislative Resolve 93 of the Tenth Legislative, First Session, proposed the formation of a Legislative Teleconference Network (LTN). The mission of the network outlined in the resolve was to broaden two-way contact between constituents and legislators which would increase legislative responsiveness and public confidence in the legislature.[2] The following year operations began in six sites: Anchorage, Bethel, Fairbanks, Ketchikan, Juneau, and Nome. As interest grew around these centers so did the requests for information and desire to participate in legislative activities in the outlying areas. The Division of Public Services was created by the Legislative Affairs Agency in 1979 to oversee the dissemination of non-partisan information and encourage involvement with the Legislature through the existing information offices and teleconference centers. Most of the former Teleconference Centers were upgraded to regional Legislative Information Offices (LIO's) with their roles expanded accordingly. The three types of facilities maintained by the Division of Public Services along with their various functions are described below.

Full time LIO's	Half Time LIO's	Session Only LIO's
Anchorage	Valdez	Glennallen
Barrow		Ketchikan
Bethel		Petersburg
Delta Junction		
Dillingham		
Fairbanks		
Juneau		
Kenai Peninsula/Soldotna		
Kodiak		
Kotzebue		
Mat-Su/Wasilla		
Nome		
Sitka		

LIO's are year-round, half time, or session-only facilities that have resources including: Alaska statutes, legislative reports and bills, at least one paid staff person and teleconferencing and data communication capabilities.

Teleconference Sites

Ambler
Anatuvuk Pass
Cordova
Fort Yukon
Galena
Gambell
Haines
Homer
Hooper Bay
Kaktovik
Naknek
Newhalen
Noorvik
Point Hope
Saint Paul
Sand Point
Savoonga
Selawik
Seward
Shishmaref
Togiak
Toksook Bay
Unalakleet
Unalaska
Wainwright
Wrangell
Yakutat

These sites are open only for scheduled teleconferences. A staff person or moderator is on call and paid an hourly rate. The offices perform a limited public information role by providing copies of current legislation, varied or comprehensive requests are referred to the nearest LIO. A few sites have dial-up access to data services but most sites are without data communication capabilities.

Volunteer Teleconference Sites

Anderson
Angoon
*Cantwell
Chistochina
Chitina
Copper Center
*Craig
Dot Lake
#Eagle
Gakona
Gulkana
Healy
Hydaburg
Kake
+Kenny Lake
Klawock
Mentasta
+Metlakatla
Nenana
+Nikishka
Northway
+Pelican
Skagway
Slana
#Tok

* Shares location with Learn/Alaska Teleconference Network
# These sites are funded but have no community volunteer to operate the equipment.
+ These sites were funded in FY84.

VTS's allow smaller communities to be apart of the Legislative process. The necessary equipment and training is provided by LAA, the community provides the space and a volunteer moderator. A few sites share both location and moderator with the Learn/Alaska Network (LAN).

B. Equipment Leased by the Division of Public Services

The LTN is supported by a leased four wire dedicated audio circuit which travels to twenty of the sixty-seven communities serviced by the the network. These dedicated lines interlink multiple sites together into a private network secular from the public telephone network. Some of the benefits associated with a dedicated circuit are high quality sound, accessibility twenty-four a day, and lower rates per hour when used frequently. Dedicated circuits are billed on a per mile basis and are charged the full amount irrespective of the usage. Circuit cost average $27,500 a month or approximately $1,100 to $1,200 per site a month.[3] The price varies at each site dependent on location and proximity to other sites.LTN personnel believe the dedicated line is fully justified when considering the combined usage of the legislators, the LAA administrators, and the outside agencies.[4] The Teleconference Task Force choose the dedicated circuit for a number of reasons:

> ...The closed circuit configuration utilizing local teleconference centers (LTC's) was felt to more closely approximate the interactive environment natural for a committee....
>
> ...A major consideration in the decision to lease a full time circuit for the legislative session was the convenience of scheduling this would offer. Often committee meetings are scheduled with one or two days notice, cancelled or rescheduled. It would be impossible for the RCA conference operator to establish circuits on a daily basis within such limits and changing lead times. In addition the full time availability of a dedicated circuit opened up the possibility that Legislative Affairs and other agencies interested in teleconferencing would have the opportunity to use the network subject to legislative priorities...[5]

To aid and enhance the usability of the dedicated circuit, the LTN leases a Dantel selective signalling system from Alascom. Since moderators at most LTN sites usually have their conference sets on at all times calls are made to a particular site by voice signalling. The Dantel system allows moderators to ring a particular LTN site that may not have its conference telephone turned on. The switching system also has a privacy feature which can exclude LTN sites not wanted in a particular teleconference. However, the most important characteristic of the Dantel signalling system is its "offnet" capabilities. The offnet feature acts as a door through which the dedicated circuit can travel into the regular telephone lines. The network then has the ability to expand to any site that has telephone service, hence the formation of most of the Teleconference Centers and Volunteer Sites. These sites are designed to provide teleconferencing services to areas with lower levels of participation that cannot support the costs of a full time dedicated circuit. Because they are not on the dedicated circuit one of the offnet ports in Anchorage, Fairbanks or Juneau is used to connect the four wire dedicated line into the two wire telephone dial-up line.

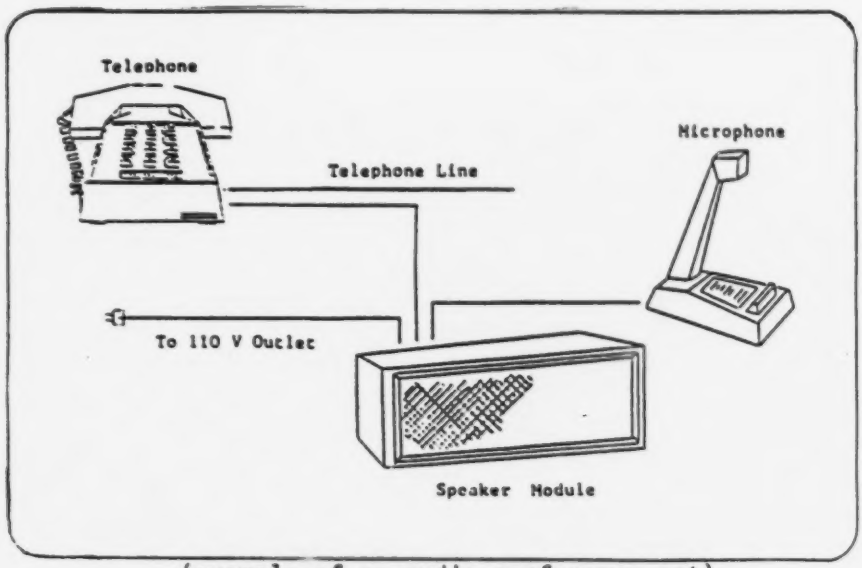
C. Equipment Owned by the Division of Public Services

If a number of dial-up sites are to be scheduled in a teleconference, a bridge must be used. That is, a central number is dialed up by all conferees and they are connected into the teleconference. At this time the LTN uses a number of different bridging facilities to interconnect the various dial-up sites. Kellogg and the Darome Connection facilities in the lower states have been used quite often. These services have a bridge fees ranging from $15.00 to $20.00 an hour but have lower toll rates because of the lower interstate fees. Alascom's bridging facilities were used during the beginning of last session but many technical problems experienced discouraged further use of these facilities. The Learn/Alaska Network bridging facilities are used on a time and priority basis. Educational use is given a priority over other agency use of the bridging facilities.

As the number of Teleconference Centers and Volunteer Sites grows adequate bridging facilities are needed to handle the increasing teleconferences involving these sites. As stated earlier one the main arguments for a dedicated circuit was the ease of scheduling and rescheduling teleconferences during the hectic days of session. The LTN must set up audio conferences for dial-up sites with the same threat of postponement or cancellation but with the added ordeal of scheduling a bridge through another agency or company. For instance, if the Learn/Alaska bridge is used, a LTN conference can be bumped for a educational priority conference. Because of numerous scheduling demands, the LTN last year requested an informal proposal from the Learn/Alaska network for all of their bridging needs. Learn/Alaska's first proposal offered "full, twenty-four hours a day, seven days per week bridge service for an annual cost of $78,000. The second offered eight hours per day, six days a week bridging service for $43,000. Both offerings included operators, scheduling, fixed line charges and equipment repair."[6] The LTN turned down these proposals, believing them to be too expensive for the type of service they would receive. In order to procure the required bridging facilities, the Division of Public Services submitted a budget request for $50,000 to purchase a bridging facility for the LTN. This request was approved by the Legislature this 1984 session. The money appropriated will be spent for two bridges with ten ports each, operational by January, 1985.[7] Two bridges should be sufficient to handle LTN needs during the coming session. However, the money set aside does not include personnel costs. Kathi Baltes, LTN Network Coordinator, is hoping that existing personnel will be able to handle the added scheduling and moderating necessary.

Western Electric conference sets, which include a telephone amplifier and microphones, are owned by the Division of Public Services and available at all sites. Additional microphones are used to ensure

good sound quality for larger groups. There are a number of units available on the market, however Western Electric conference sets are known for the quality of their audio transmission. The Department of Administration when researching recently for equipment for their model executive teleconference room, chose this product.



(example of an audio conference set)

Unfortunately these sets will no longer be manufactured within the next couple of years.[8] LTN personnel assume that the agency will purchase Darome conveners and microphones when they are no longer able to purchase Western Electric.[9] This seems unfortunate, again because of the higher quality of the Western Conference sets and the higher price of the Darome conveners. (approximately $950/unit for Western Electric and $1200/unit for Darome)[10] Long term considerations should be examined before a replacement for the Western Electric conference sets is chosen. The sites that will require conference sets will most likely be either new LTC's or VTS's. These new sites also will not be on the dedicated circuit and will have to be accessed through offnet ports by dial-up through regular phone lines. With these factors in mind at least three stipulations related to dial-up sites are outlined below that should affect the choice of conference sets.

1) user interface - the interaction between users and equipment should be considered. The "push to talk" microphones used at most sites are often cumbersome for novice teleconferees who must remember to activate the microphone to speak. Voice activated microphones and laser light microphones that transmit sound on a line of sight basis to a central microphone are options now available.

2) turn around - quick voice switching or turn around from send and receive is a desired feature for dial-up site teleconference equipment. Some conference sets such as Darome have a delay between transmitting and receiving. The delay can be compounded

when signals are relayed by satellite transmission which is recognizable by the an echo quality and often causes slight but recognizable delays. If a bridge is utilized connecting two or more dial-up sites another delay is added, it is therefore beneficial to avoid using a piece of equipment that would add to rather than detract from certain inherent problems such as line delay. Care should be taken in selecting a conference set that has the ability to switch from send to receive quickly.

3) compatibility with existing systems - new equipment should be examined as to how it will adapt to the current systems from a long term point of view. Darome conveners and microphones are designed for two wire dial-up transmission. If a site were upgraded to a four wire dedicated line would the Darome equipment adapt to a four wire circuit or would it have to be replaced?

Some of the suggestions discussed above may not be suitable for the LTN but are simply put forth as options that were not available a few years ago. As an example, voice activated microphones may free a teleconferee from activating a microphone manually but at the same time they have been criticized because they can transmit peripheral sounds within a conference area, this feature can be annoying and confusing to listeners on the other end of the conference. The Division of Public Services should continue to examine the special requirements of the users, the environments, and the new options available, when purchasing equipment for the network.

Another piece of equipment found at all LTN sites is a facsimile receiver. Facsimile receivers or telecopiers are a device that transmit page size photocopies over regular or dedicated telephone lines. Hard copy materials are a communication enhancement that can improve the effectiveness of a teleconference. A poll conducted by telecommunication consultants at the Institute for the Future (IFTF), based on a survey of 317 respondents from eighteen U.S. companies and governmental agencies, reveals that 52% of 283 respondents believe that facsimile receivers are important to their teleconference needs.[11] The LTN uses the telecopiers to send information necessary for a teleconference, graphics that can provide visual stimulus to an audio conference, or last minute changes in teleconference schedules. This piece of equipment is most helpful at those sites that do not have data communication capabilities such as electronic mail.

The Division of Public Services utilizes three models of Zerox telecopiers throughout the network. The majority of the LIO's use more than one type of telecopier. Because of considerable activity the sites of Juneau, Anchorage, Fairbanks, and Kotzebue have Zerox 495 Telecopiers which are automatic for unattended transmission, extremely fast and are compatible with all IBM telecopiers. They operate on two wire regular telephone lines. Present at these sites are also Zerox 400's and 455's which function manually. Other LIO's generally have both 400 and 455's models. The Zerox 400 is an older model that

operates on both regular telephone lines and the dedicated circuit. The 400's are used primarily to transmit information between LIO's. The 455's are the newer model, they transmit information faster than the 400's, however will not operate over the dedicated circuit. These models are used to transmit information from the regional LIO's to dial-up sites. Dial-up sites generally have Zerox 455's.

CHART I [12]

LIO	495	455	400	SCANMASTER
Anchorage	X	X	X	X
Barrow		X	X	
Bethel		X	X	
Delta Jnct			X	
Dillingham		X	X	
Fairbanks	X	X	X	X
Glennallen		X	X	
Juneau	X	X	X	X
Kenai		X	X	
Ketchikan		X	X	
Kodiak		X	X	
Kotzebue	X		X	
Mat-Su		X	X	
Nome		X	X	
Petersburg		X		
Sitka			X	X
Valdez			X	

The number of facsimile receivers at each LIO site was questioned. Linda Hoff, Juneau Teleconference Manager, explained that unfortunately the LIO's needed the various models at each site so that communication is guaranteed between any model trying to transmit information to a particular LIO.[13] The different models are spread about the network so that every site is able to communicate to another via a telecopier. However, none of the models utilized by the network have all of the characteristics necessary to communicate with any given model. The Zerox 400 can only communicate with another 400, the Zerox 495 has the ability to communicate with both a model 400 or 455, however, it does not have the ability to operate over a dedicated circuit. While the 400's are slow, they have the advantage of being able to operate over the dedicated circuit with no extra charge for the transmission. Whereas the 455's and 495's are faster they induce further toll charges over the regular telephone lines. Both budgetary restraints and model design are blamed for the above situation.[14] Perhaps this situation could be partially solved by leasing the facsimile receivers rather than purchasing them outright. Other equipment leased by the Legislative Affairs has allowed the LTN to remain somewhat flexible because new capabilities and improvements are easily added without as much financial burden.

The SCANMASTER is another facsimile receiver available in Juneau, Sitka, Anchorage, and Fairbanks through the Data Processing center. SCANMASTER is a digital device which transmits over data lines rather than telephone lines. The SCANMASTER has some advantages over the regular telecopiers:

1. Images sent via the SCANMASTER may be stored on the central computer, an electronic filing system is often less cumbersome than regular paper files;

2. The SCANMASTER is supported by the System Network Architecture (SNA), the state computer network, so interagency use of the SCANMASTER is possible. This feature would alleviate the concern over compatibility of telecopiers between different agencies;

3. Finally, according to Don Fisher, Deputy Executive Director of LAA, the SCANMASTER may "eliminate the need for separate data and facsimile facilities."[15]

The SCANMASTER is considerably more expensive than the normal facsimile equipment and can only operate where data transmission facilities exist. At this time most of the LTC's and VTS' would not be able to support a SCANMASTER because there are without data transmission capabilities. For the present, the SCANMASTER is not a viable option at all sites for regular facsimile receivers.

D. Non-Legislative Use of the LTN

Although the main mission of the LTN is to service the Legislature and its constituents, it allows other agencies to use the network on a time available basis. Under new a policy started in January, 1984, the LTN is available to other agencies for any type of teleconference during the interim, but they are restricted during the session to public hearings. The following chart is adapted from information received from the Division of Public Services in Juneau specifying the number of legislative/non-legislative conferences held through the LTN from 1982-1984.

CHART II

	Non-Legislative Teleconferences	Legislative Teleconferences	Total
Interim 1982	91	20	111
Session 1983	60	418	478
Interim 1983	116	62	178
Session 1984	22	488	510

As can be seen from Chart II, legislative use of the LTN is heavy during the session and is increasing every year.

The idea of teleconferencing facilities for the executive branch has been discussed for some time. Combining the LTN and Learn/Alaska teleconference networks to form one network that would provide all the telecommunication related services required by state government has also been discussed. In reviewing the LTN, the former suggestion seems inappropriate for two reasons: consideration of the specific purpose of providing communication between constituents and legislators as set out in Resolve 93; and use of teleconferencing becoming more widespread within the legislative community using the network almost exclusively during session periods. The specific nature of the LTN was evidenced earlier when it was shown it must have its own bridging facilities although others are available to ensure that mandated services are provided. Compromised or shared facilities would have detrimental effect on what is now a primary function. According to Kathi Baltes, Teleconference Network Coordinator for LAA: "The responsibilities of these groups go beyond pure transmission services and include planning, user education, user support, program development, and publicity to name but a few. The various entities are mandated to provide different services, each with its different priority."[16]

This is not to say that the LTN will not continue to allow other agencies to utilize the network on a time available basis. However, combining the LTN with other networks is not recommended. The Learn/Alaska is in a better position to offer the level of services required for executive branch teleconferencing without compromising their mission to serve the educational community. This proposal is treated in depth in the report "The Learn/Alaska Network: An Instructional Telecommunications System".

III. TELECOMMUNICATIONS WITHIN THE LAA DATA PROCESSING CENTER

A. LAA Data Processing Center

Most of this report has centered on the LTN of the Division of Public Services. However, within LAA, the Data Processing Center or DP also provides many services that are related and play an important role in the agency's telecommunication program. They also support the facilities necessary to access these services. There exists a symbiotic relationship with the LIOs' and the Data Processing center to generate communication within the legislative process. Below is a listing of the Data Processing Center's services:

a) Bill drafting equipment for the House, Senate, Legal Services, Attorney General and the Governor;

b) Electronic Mail for the Legislative branch of government;

c) Ombudsman case load management;

d) Distributed office support functions;

e) Host computer based text processing;

f) Connection of legislative users to statewide network of computer installations. This includes the Department of Administration's data center in Anchorage and Juneau and the Commercial Fisheries Entry Commission's main computer.

g) Retrieval of information from the Legislative data center inquiry data bases. This includes the Bill Action Status and Inquiry System (BASIS), STorage And Information Retrieval System (STAIRS), House Committee Scheduling System (HCSE), Senate Committee Scheduling System (SCSE), Bill Tracking Maintenance Facility (BTMF), Statute Inquiry Reference System (SIRS), TELEconference scheduling system, (TELE), Election District Locator System (EDLS), and the Graphical Data Display Manager (GDDM). [7]

Most of these services are actually text management or data base retrieval rather than communication tools and will not be discussed. The electronic mail system will also not be discussed because it appears in another report in this telecommunication series. ("Electronic Mail Systems"). This leaves a brief discussion of LAA computer network's ability to communicate with the state SNA network.

Via the SNA, the legislative data network is interactive with the rest of the state's data communication facilities. The SNA is IBM's generic name for protocol conversion. Protocol conversion allows different systems such as IBM's and Wangs to communicate, that is; any terminal on the SNA network is able to talk to another terminal by going through this network link without the need for additional

communication lines or equipment. This feature enhances the data communication abilities of the LAA computer network while also allowing further access to its services from other agencies.

B. Equipment Leased by the Computer Network

So that the information, text management and communication capabilities of the LAA computer network can be accessed by citizens within the state, a dedicated data network has been set up by the LAA. All of the major communication lines and the DATAPHONE II modems for the long distance lines are leased from Alascom. As with the LTN, this allows greater flexibility when new technology becomes available. The DP has computer nodes in all of the regional LIO's, as well as multiple sites within Juneau, Anchorage, and Fairbanks.

C. Equipment Owned by the Computer Network

There are also at least three LTC's with dial-up capabilities into the network; Unalakleet, Ft. Yukon, and Unalaska. The modems for these sites as well as local lines in Anchorage, Juneau, and Fairbanks are run with modems owned by LAA. Terminal hardware the department is listed below:

a. IBM 3278,3279,3287,3268,3289,3290,3270PC, and 7436 terminals being run off of IBM 3274 control units;
b. IBM DISPLAYWRITER word processors;
c. IBM 6670 information distributors (laser printers);
d. IBM 8815 SCANMASTER digital facsimile machines;
e. IBM 4250 electro-erosion printer;
f. IBM SERIES1 minicomputers (voting system);
g. IBM 3101 and TELEVIDEO 950 terminals for use in dial-up locations.[18]

IV. PLANNING FOR THE FUTURE

There a are number of projects being planned or actually underway to improve telecommunication services within the department.

The LTN is currently looking into slow scan or freeze frame video for a short term less expensive answer, to renewed interest in full video teleconferencing. The department offered video teleconferencing a few years ago, however funding was stopped because of the lack of interest compared to the expense. Slow scan video sends a slide-like picture over regular telephone lines. This feature allows teleconferees on either end to receive a visual impression of the person(s) they are dealing with. This capability also is helpful for repair of equipment at remote sites. A technician can view a problem area without having to travel to the location for inspection.

As technology continues to lower the cost of many functions, full motion video may become more feasible in the future.

The Data Processing center is examining Alascom's ALASKANET, a package that would allow easier access to data base information systems and help some of the transmission problems in the remote dial-up sites.

Both the LTN and the Data Processing center are supporting T1 carrier service between Juneau and Anchorage. This is a multiplexing system that would combine voice, data, facsimile, and teleconferencing (voice and video) on one shared transmission medium.[20] It is unknown at this time if the needs of LAA are sufficient to support this service from ALASCOM or combining the needs of LAA with other agencies would be necessary.

V. RECOMMENDATIONS

A listing of recommendations found through the report is given below:

* Replacement conference sets for the Western Electric sets currently being used should be examined for user interface, quick voice turn around and compatibility with existing systems.

* Since leasing equipment such as dedicated audio and data lines, modems, and selective switching systems has allowed the LTN to remain flexible as new capabilities and improvements are added to a product, perhaps the LTN should examine leasing facsimile receivers to alleviate the budget restraints that keep the network from replacing the old machines.

* Combining the LTN with the Learn/Alaska network to provide all the teleconferencing services required by the executive branch is not recommended. The LTN should remain separate so that the specific purpose of providing communication between legislators and contituents will not be compromised. The Learn/Alaska network is in a better position to provide these necessary services to the executive branch.

Endnotes

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2. Legislative Resolve 93, pg.1
3. Baltes, Kathleen, Teleconference Network Coordinator, LAA, interview, 8/15/84
4. Ibid.
5. Goldins, Lawrence, Legislative Teleconferencing Network Task Force Report, pgs.2,3
6. Baltes, Kathleen, memo to Jennifer Klein, 6/8/84, pg.5
7. Baltes, Kathleen, interview, 7/10
8. Baltes, Kathleen, interview, 6/28, Kadow, Charity, interview with Irene Rowan, 5/84
9. Baltes, Kathleen, interview, 7/10
10. Kadow, Charity, interview, 5/84
11. Johansen, Robert, Telconferencing and Beyond, pg.19
12. Legislative Affairs Agency, Juneau Information Office
13. Hoff, Linda, Juneau Teleconference Manager, interview, 8/31/84
14. Ibid.
15. Fisher, Don, Deputy Executive Director, LAA, memo to Jennifer Klein, 6/25/84, pg. 4
16. Baltes, Kathleen, 6/8/84 memo, pg.4
17. Fisher, Don, 6/25/84 memo, pg. 1
18. Ibid. pg. 2
19. Ibid. pg. 5
20. Baltes, Kathleen, 6/8/84 memo, pg. 5

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